From: Robiou, Grace [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP

(FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=1EE414FC6ABD4A879A237F08B0836353-GROBIOU1]

Sent: 11/8/2016 4:07:52 PM

To: Sweeney, Stephen [/o=ExchangeLabs/ou=Exchange Administrative Group

(FYDIBOHF23SPDLT)/cn=Recipients/cn=37ae2b769eab4231bdf19334e3651814-SSWEENEY]; Chemerys, Ruth

[/o=ExchangeLabs/ou=Exchange Administrative Group

(FYDIBOHF23SPDLT)/cn=Recipients/cn=908be985d82a4ae4a7888d13aedcec9d-Chemerys, Ruth]; Glazer, Thomas

[/o=ExchangeLabs/ou=Exchange Administrative Group

(FYDIBOHF23SPDLT)/cn=Recipients/cn=6578deb6a4b042ffbe42a9854429feb5-Glazer, Tho]

CC: Monschein, Eric [/o=ExchangeLabs/ou=Exchange Administrative Group

(FYDIBOHF23SPDLT)/cn=Recipients/cn=110281a30e814820830c14fa5075ff90-EMonsche]; Havard, James

[/o=ExchangeLabs/ou=Exchange Administrative Group

(FYDIBOHF23SPDLT)/cn=Recipients/cn=9350676809e8403994f1dfc2b7bfdcfe-JHAVARD]; Fowler, Jamie

[/o=ExchangeLabs/ou=Exchange Administrative Group

(FYDIBOHF23SPDLT)/cn=Recipients/cn=0b74e8771b8049e5bde0f26dc5b1de97-JFowler6]; Schroer, Lee

[/o=ExchangeLabs/ou=Exchange Administrative Group

(FYDIBOHF23SPDLT)/cn=Recipients/cn=573fc5bb4942495d9fc3cd9438634244-LSCHROER]; Rappoli, Brian

[/o=ExchangeLabs/ou=Exchange Administrative Group

(FYDIBOHF23SPDLT)/cn=Recipients/cn=5d1b13e0ec164d34befd1431f7236447-Rappoli, Brian]; Zobrist, Marcus

[/o=ExchangeLabs/ou=Exchange Administrative Group

(FYDIBOHF23SPDLT)/cn=Recipients/cn=844deb75a43b4d319c6adcaf8a5b2e4b-mzobrist]

Subject: Re: Pteropod data and OR 303(d) list implications

Got it. Thanks, Steve. This last comment/observation certainly goes beyond my role in this action. You know that I find the listing program interesting, so happy for you all to take it with a grain of salt: The NOI is for 60 days.

Attorney Client / Deliberative Process / Ex. 5

Attorney Client / Deliberative Process / Ex. 5

Automicy offent / Democrative / 100c39 /

Attorney Client / Deliberative Process / Ex. 5

Time for breakfast; regards

everyone.

From: Sweeney, Stephen

Sent: Tuesday, November 8, 2016 10:23 AM

To: Chemerys, Ruth; Robiou, Grace; Glazer, Thomas

Cc: Monschein, Eric; Havard, James; Fowler, Jamie; Schroer, Lee; Rappoli, Brian; Zobrist, Marcus

Subject: RE: Pteropod data and OR 303(d) list implications

Attorney Client / Deliberative Process / Ex. 5

As it relates to ocean acidification, my understanding is that NOAA gathered additional data and information over the course of this past summer, but that the data has not yet completed QA/QC, Attorney Client / Deliberative Process / Ex. 5

Attorney Client / Deliberative Process / Ex. 5

Attorney Client / Deliberative Process / Ex. 5

Attorney Client / Deliberative Process / Ex. 5

From: Chemerys, Ruth

Sent: Tuesday, November 08, 2016 10:14 AM

To: Robiou, Grace < Robiou. Grace@epa.gov>; Sweeney, Stephen < Sweeney. Stephen@epa.gov>; Glazer, Thomas <glazer.thomas@epa.gov>

Cc: Monschein, Eric < Monschein. Eric@epa.gov>; Havard, James < Havard. James@epa.gov>; Fowler, Jamie <Fowler.Jamie@epa.gov>; Schroer, Lee <schroer.lee@epa.gov>; Rappoli, Brian <Rappoli.Brian@epa.gov>; Zobrist, Marcus <Zobrist.Marcus@epa.gov>

Subject: RE: Pteropod data and OR 303(d) list implications

Attorney Client / Deliberative Process / Ex. 5 Thanks Steve and Grace. Yes, from what I could gather! Attorney Client / Deliberative Process / Ex. 5 Attorney Client / Deliberative Process / Ex. 5 Attorney Client / Deliberative Process / Ex. 5

I'll work with Brian and OGC to schedule a follow up discussion.

Ruth

From: Robiou, Grace

Sent: Tuesday, November 08, 2016 10:07 AM

To: Sweeney, Stephen <<u>Sweeney.Stephen@epa.gov</u>>; Chemerys, Ruth <<u>Chemerys.Ruth@epa.gov</u>>; Glazer, Thomas <glazer.thomas@epa.gov>

Cc: Monschein, Eric < Monschein. Eric@epa.gov >; Havard, James < Havard. James@epa.gov >; Fowler, Jamie < Fowler.Jamie@epa.gov>; Schroer, Lee < schroer.lee@epa.gov>; Rappoli, Brian < Rappoli.Brian@epa.gov>; Zobrist, Marcus < Zobrist. Marcus@epa.gov>

Subject: Re: Pteropod data and OR 303(d) list implications

At yesterday's meeting -- which Brian and I attended in person and Ruth impressively attended by phone considering it was 7:30 East Coast time (thank you Ruth!) --- Regional staff did acknowledge they have not yet briefed Dan Opalski, their Water Division Director, on their recommendation. They are looking to do so soon given there is now an NOI on this listing decision.

Attorney Client / Deliberative Process / Ex. 5

In any scenario, I agree with Ruth that this is an important action. To the extent that we can be helpful from the technical perspective on ocean acidification impacts and what studies are available in the West coast, please continue to keep Brian and I involved. I look forward to working with you on this action.

From: Sweeney, Stephen

Sent: Tuesday, November 8, 2016 9:54 AM **To:** Chemerys, Ruth; Glazer, Thomas

Cc: Monschein, Eric; Havard, James; Fowler, Jamie; Schroer, Lee; Robiou, Grace; Rappoli, Brian

Subject: RE: Pteropod data and OR 303(d) list implications

Ruth,

I did speak with Lori Cora about this earlier this summer.

Attorney Client / Deliberative Process / Ex. 5

Attorney Client / Deliberative Process / Ex. 5

Attorney Client / Deliberative Process / Ex. 5

Attorney Client / Deliberative Process / Ex. 5

Attorney Client / Deliberative Process / Ex. 5

Steve

From: Chemerys, Ruth

Sent: Tuesday, November 08, 2016 8:39 AM

To: Sweeney, Stephen < Sweeney. Stephen@epa.gov >; Glazer, Thomas < glazer.thomas@epa.gov >

Cc: Monschein, Eric < Monschein. Eric@epa.gov >; Havard, James < Havard. James@epa.gov >; Fowler, Jamie

<Fowler.Jamie@epa.gov>

Subject: Pteropod data and OR 303(d) list implications

Steve and Tom:

I was on a call yesterday with Region 10, Brian Rappoli, and Grace Robiou to talk about OA modeling and listing issues in OR and WA, including pteropod shell dissolution data and implications for the OR 303(d) list. (Brian and Grace were out visiting Region 10)

There was a paper by Bednarsek (attached) which shows "a strong positive correlation between the proportion of pteropod individuals with severe shell dissolution damage and the percentage of undersaturated water in the top 100 m with respect to aragonite." Folks originally thought one pteropod sample was in OR state waters, but it turns out it is not.

Attorney Client / Deliberative Process / Ex. 5

Attorney Client / Deliberative Process / Ex. 5

Attached is ORD's analysis of the data.

The Region is proposing to take public comment on the pteropod data as part of public notice on the OR 303(d) list.

Attorney Client / Deliberative Process / Ex. 5

Attorney Client / Deliberative Process / Ex. 5

The Region 10 ORC Lori mentioned that she'd been in touch with OGC. Are you both aware of the issue, and were either or both of you discussed this with Region 10? We'd like to set up a call among relevant Region 10 and HQ folks to discuss further and to better understand the Region's thinking.

-Ruth

From: Fullagar, Jill

Sent: Monday, November 07, 2016 1:41 PM **To:** Chemerys, Ruth < Chemerys. Ruth@epa.gov>

Subject: Pteropod article

And here's the article.

Jill Fullagar, Impaired Waters Coordinator
Watershed Unit, Office of Water and Watersheds
US EPA, Region 10
1200 Sixth Avenue, Suite 900 (OWW-192)
Seattle, WA 98101-3140
(206) 553-2582, (206) 553-1280 (fax)
fullagar.jill@epa.gov